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ON SOME METALLIC DERIVATIVES OF ETHYL THIOGLYCOLLATE[1]

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In 1910 Abel[2] discovered that thioglycollic ester dissolves antimony trioxide with the greatest ease, forming an antimony derivative, $Sb(SCH_2CO_2C_2H_5)_3$, according to the equation: $2Sb_2O_3+6HSCH_2CO_2C_2H_5=2Sb(SCH_2CO_2C_2H_5)_3+3H_2O$. The antimony compound separates as a heavy oil which, when treated in absolute alcohol with ammonia, yields the corresponding amide, $Sb(SCH_2CONH_2)_3$, obtained by precipitation from alcohol with ether as a colorless or slightly reddish, semiresinous mass soluble in water in all proportions with neutral reaction. The experiments of Rowntree, carried out in collaboration with Abel, showed that the new amide is a very powerful trypanosomicidal substance.

Professor Abel found that the thioglycollic ester reacts energetically with mercuric oxide also, and in order to determine whether the reaction discovered by him is of general applicability, he suggested to the writer that he try the action of various other metallic oxides on the ester. It was hoped that the resulting products might be so slightly soluble as not to be toxic when applied on open wound surfaces, but yet soluble enough to be antiseptic and bactericidal. Abel's expectation that his reaction would prove to be general has been confirmed; whether the products formed are of pharmacological and therapeutic value we have not yet had an opportunity to determine.

Following Abel's general method (for details see the forthcoming paper in the Journal of the American Chemical Society), the compounds listed below have been prepared and analyzed.

Triethyl bismuthtrithioglycollate, $Bi(SCH_2CO_2C_2H_5)_3$

Diethyl mercurydithioglycollate, $Hg(SCH_2CO_2C_2H_5)_2$

Ethyl silverthioglycollate, $AgSCH_2CO_2C_2H_5$.

A copper compound with 9.3 % of copper for which no simple formula can be derived; the normal compound, $Cu(SCH_2CO_2C_2H_5)_2$, would contain 21.06% of copper.

Zinc, arsenic, and tin compounds were also prepared but have not yet been analyzed.

[1] A more detailed report of this investigation will appear in the May issue of the Journal of the American Chemical Society.

[2] Rowntree, L. G., and Abel, J. J., *J. Pharmacology Exper. Therapeutics*, **2**, 1910, (108).